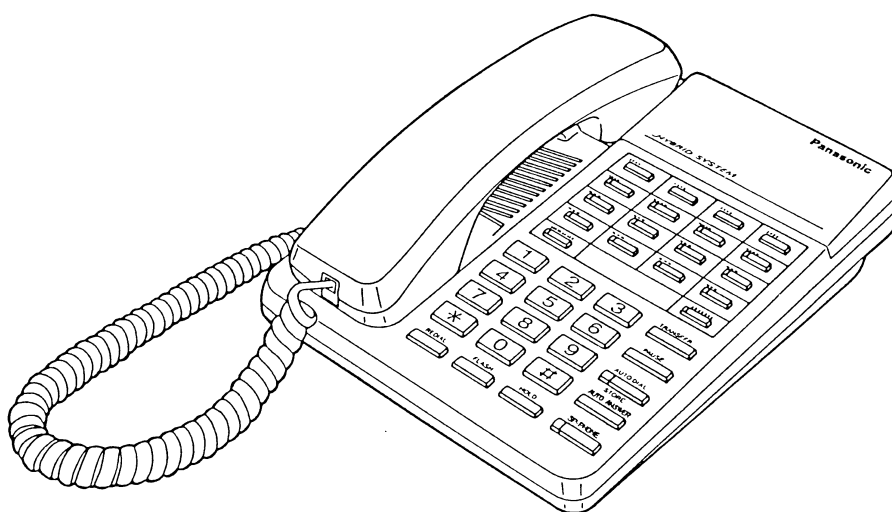


# Service Manual

## and Technical Guide

PROPRIETARY TELEPHONE FOR  
ELECTRONIC MODULAR SWITCHING SYSTEM

# KX-T7020



**SPECIFICATIONS/ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ**

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**SCHEMATIC DIAGRAM/ПРИНЦИПИАЛЬНАЯ СХЕМА**

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**ACCESSORIES AND PACKING MATERIALS/ПРИНАДЛЕЖНОСТИ И УПАКОВОЧНЫЕ МАТЕРИАЛЫ**

**CABINET AND ELECTRICAL PARTS LOCATION/РАСПОЛОЖЕНИЕ ЧАСТЕЙ КОРПУСА И ЭЛЕКТРИЧЕСКИХ ЧАСТЕЙ**

**HANDSET PARTS LOCATION/РАСПОЛОЖЕНИЕ ЧАСТЕЙ ТРУБКИ**

**REPLACEMENT PARTS LIST/СПИСОК ЗАПАСНЫХ ЧАСТЕЙ**

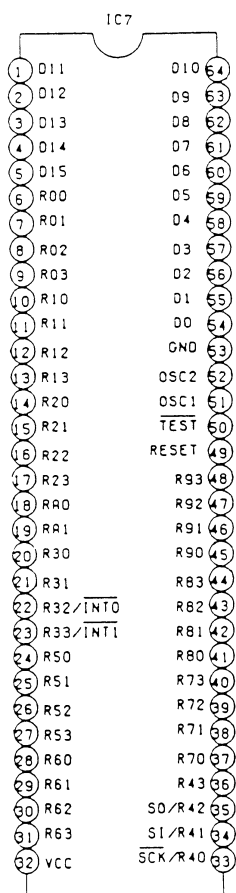
# Panasonic

## ■ SPECIFICATIONS

Station Loop Limit:	40 ohms
Cabling Method:	2 pair wire
Jacks:	EMSS, Handset
Dimensions:	172 (W)×90 (H)×240 (D) mm with handset (6 <sup>25</sup> / <sub>32</sub> "×3 <sup>17</sup> / <sub>32</sub> "×9 <sup>7</sup> / <sub>16</sub> " )
Weight:	850 g (1 lb 14 oz)

Design and specifications are subject to change without notice.

## IC DATA



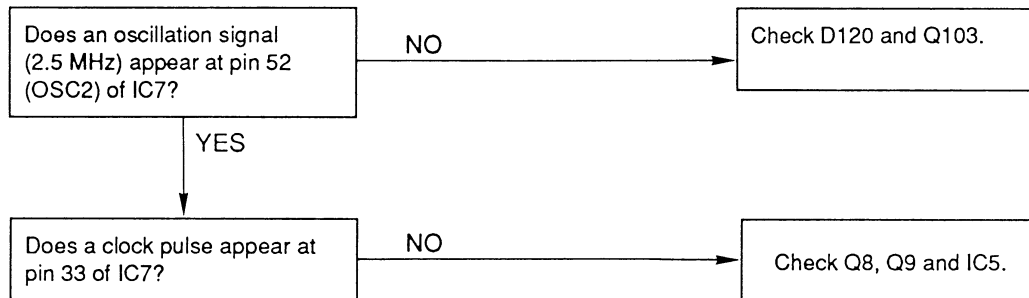
IC7 PQVI4046SA92  
 Program ROM: 4K Byte (4 bit)  
 Internal RAM: 1K bit  
 Clock Frequency: 2.5 MHz  
 Power Supply Voltage: 2.7–6 V

Pin No.	Mark	Function	High	Low
1	D11	LED Control Output	ON	OFF
2	D12	LED Control Output	ON	OFF
3	D13	LED Control Output	ON	OFF
4	D14	LED Control Output	ON	OFF
5	D15	LED Control Output	ON	OFF
6	R00	LED Control Output	ON	OFF
7	R01	LED Control Output	ON	OFF
8	R02	LED Control Output	ON	OFF
9	R03	LED Control Output	ON	OFF
10	R10	Tone Control Output	ON	OFF
11	R11	Tone Control Output	ON	OFF
12	R12	Tone Control Output	ON	OFF
13	R13	Tone Control Output	ON	OFF
14	R20	Speaker Mute	ON	OFF
15	R21	MIC Mute	ON	OFF
16	R22	Handset / SP-Phone Power Control	ON	OFF
17	R23	Not Used	-----	-----
18	RA0	Key Input	Disable	Enable
19	RA1	Ground	-----	-----
20	R30	Not Used	-----	-----
21	R31	Not Used	-----	-----
22	R32/INT0	Interrupt Input	Standby	Active
23	R33/INT1	Interrupt Input	Standby	Active

Pin No.	Mark	Function	High	Low
24	R50	Key Scan Output	Normal	Active
25	R51	Key Scan Output	Normal	Active
26	R52	Key Scan Output	Normal	Active
27	R53	Key Scan Output	Normal	Active
28	R60	DTMF Control	Normal	Active
29	R61	DTMF Control	Normal	Active
30	R62	DTMF Control	Normal	Active
31	R63	Not Used	-----	-----
32	Vcc	(+) Power Source Terminal	-----	-----
33	SCK/R40	Interrupt Output	Disable	Enable
34	SI/R41	Key Input	Disable	Enable
35	S0/R42	Key Input	Disable	Enable
36	R43	Key Input	Disable	Enable
37	R70	DTMF Control	Normal	Active
38	R71	DTMF Control	Normal	Active
39	R72	DTMF Control	Normal	Active
40	R73	DTMF Control	Normal	Active
41	R80	Not Used	-----	-----
42	R81	SP-Phone Chip Select Control Output	OFF	ON
43	R82	Not Used	-----	-----
44	R83	SP-Phone MIC Mute Control Output	ON	OFF
45	R90	Key Input	Disable	Enable
46	R91	Key Input	Disable	Enable
47	R92	Power Fail Detect Input	Power Down	Normal
48	R93	Hook Data Input	Off-Hook	On-Hook
49	RESET	System Reset Input	-----	-----
50	TEST	-----	-----	-----
51	OSC1	System Clock	-----	-----
52	OSC2	System Clock	-----	-----
53	GND	Ground	-----	-----
54	D0	Not Used	-----	-----
55	D1	Key Input	Disable	Enable
56	D2	LED Reset Signal Output	Active	Normal
57	D3	Data Input Control	Normal	Active
58	D4	Data Input	Disable	Enable
59	D5	Data Output	Active	Normal
60	D6	Automatic Redial Signal Input	Disable	Enable
61	D7	SP-Phone Path Control	ON	OFF
62	D8	OHCA Path Control	ON	OFF
63	D9	LED Control Output	ON	OFF
64	D10	LED Control Output	ON	OFF

## TROUBLE SHOOTING GUIDE

## 1) NO OPERATION



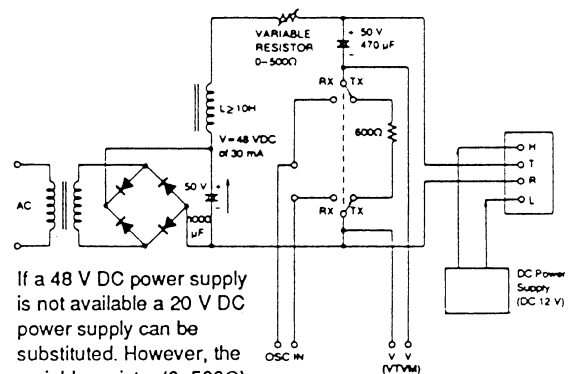
## ADJUSTMENTS

- Perform the following adjustment after replacing IC1.

<b>Test Equipment:</b>
Loop Simulator, DC Power Supply RC Oscillator VTVM
<b>Preparation:</b>
<ol style="list-style-type: none"> <li>1. Set the unit's controls as follows: A. VOLUME CONTROL—"MAX"</li> <li>2. Connect Test Points <math>\nabla</math>-<math>\nabla</math> and <math>\nabla</math>-<math>\nabla</math>.</li> <li>3. Disconnect the microphone in the unit.</li> <li>4. Set the variable resistor of the loop simulator to maximum resistance (fully counterclockwise).</li> <li>5. Connect the DC power supply. (Set voltage...12 V)</li> <li>6. Connect the unit to the loop simulator.</li> <li>7. Make all adjustments in a quiet room.</li> <li>8. After all adjustments are made, disconnect Test Points <math>\nabla</math>-<math>\nabla</math>, <math>\nabla</math>-<math>\nabla</math> and connect the microphone.</li> </ol>
<b>Adjustment Level:</b>
<ol style="list-style-type: none"> <li>1. Set the loop simulator selector switch to "TX".</li> <li>2. Connect the RC Oscillator to Test Point <math>\nabla</math>(-)-<math>\nabla</math>(+), and connect an electrolytic capacitor (50 V, 1 <math>\mu</math>F) as shown below.</li> <li>3. Set RC Oscillator to 1 kHz, -56 dBm.</li> </ol> <div style="text-align: center;"> </div> <ol style="list-style-type: none"> <li>4. Connect the VTVM to loop simulator.</li> <li>5. Adjust VR2 for a reading of -17 dBm, <math>\pm 0.5</math> dBm, on the VTVM.</li> </ol>

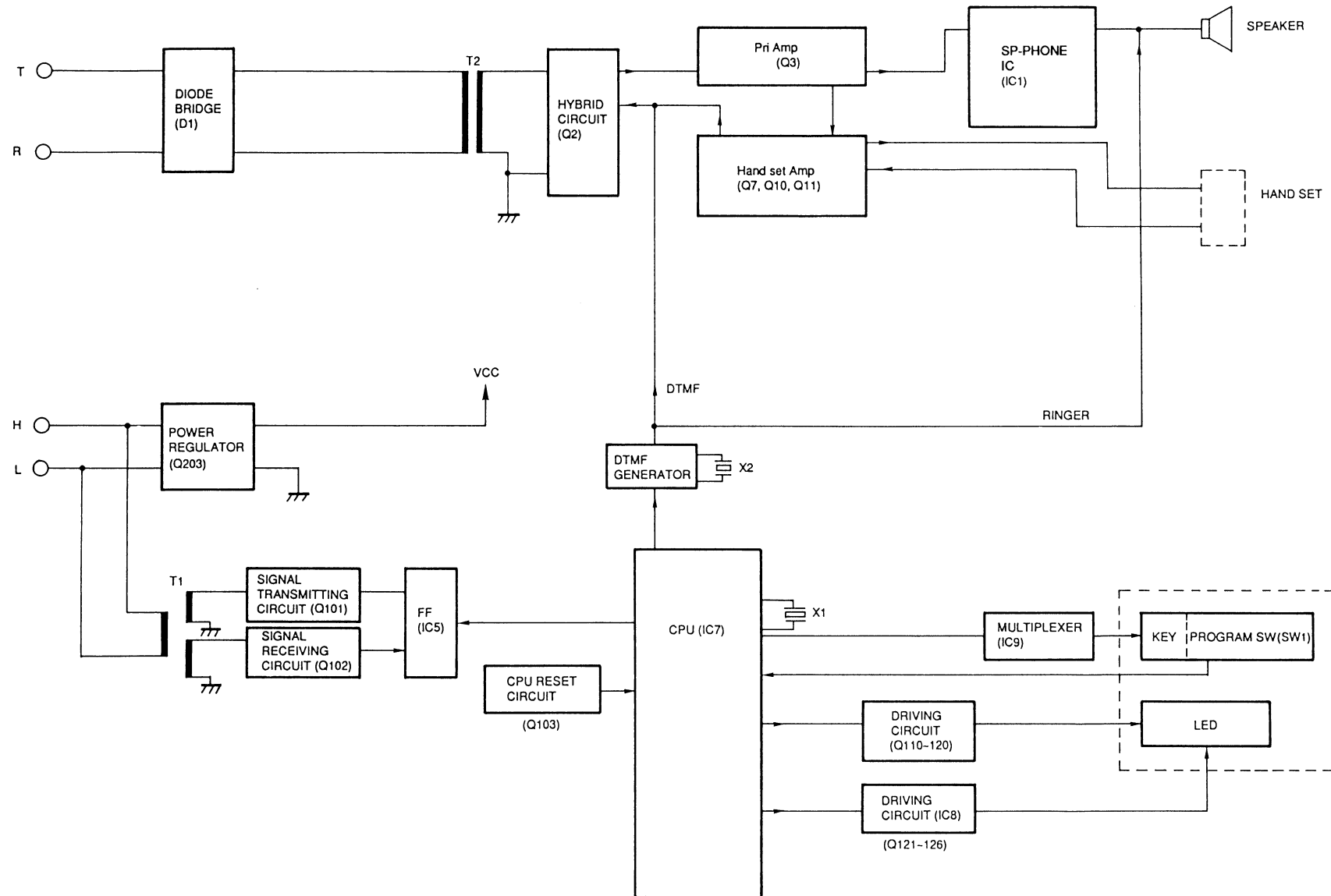
Please refer to Printed Circuit Board which is located test points ( $\nabla$ ).

Schematic Diagram of Loop Simulator

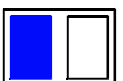
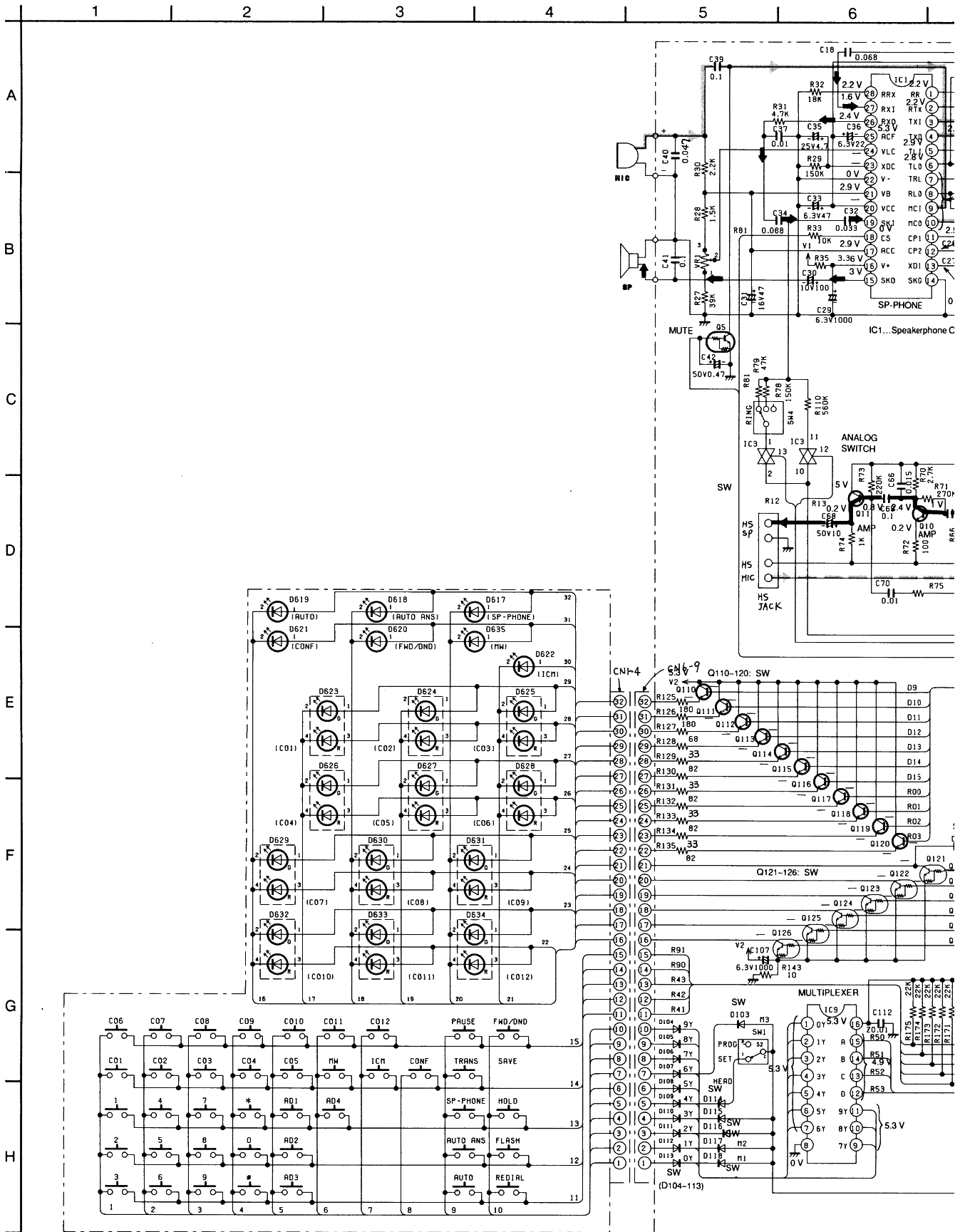


If a 48 V DC power supply is not available a 20 V DC power supply can be substituted. However, the variable resistor (0-500 $\Omega$ ) must be set to 0 ohms

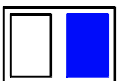
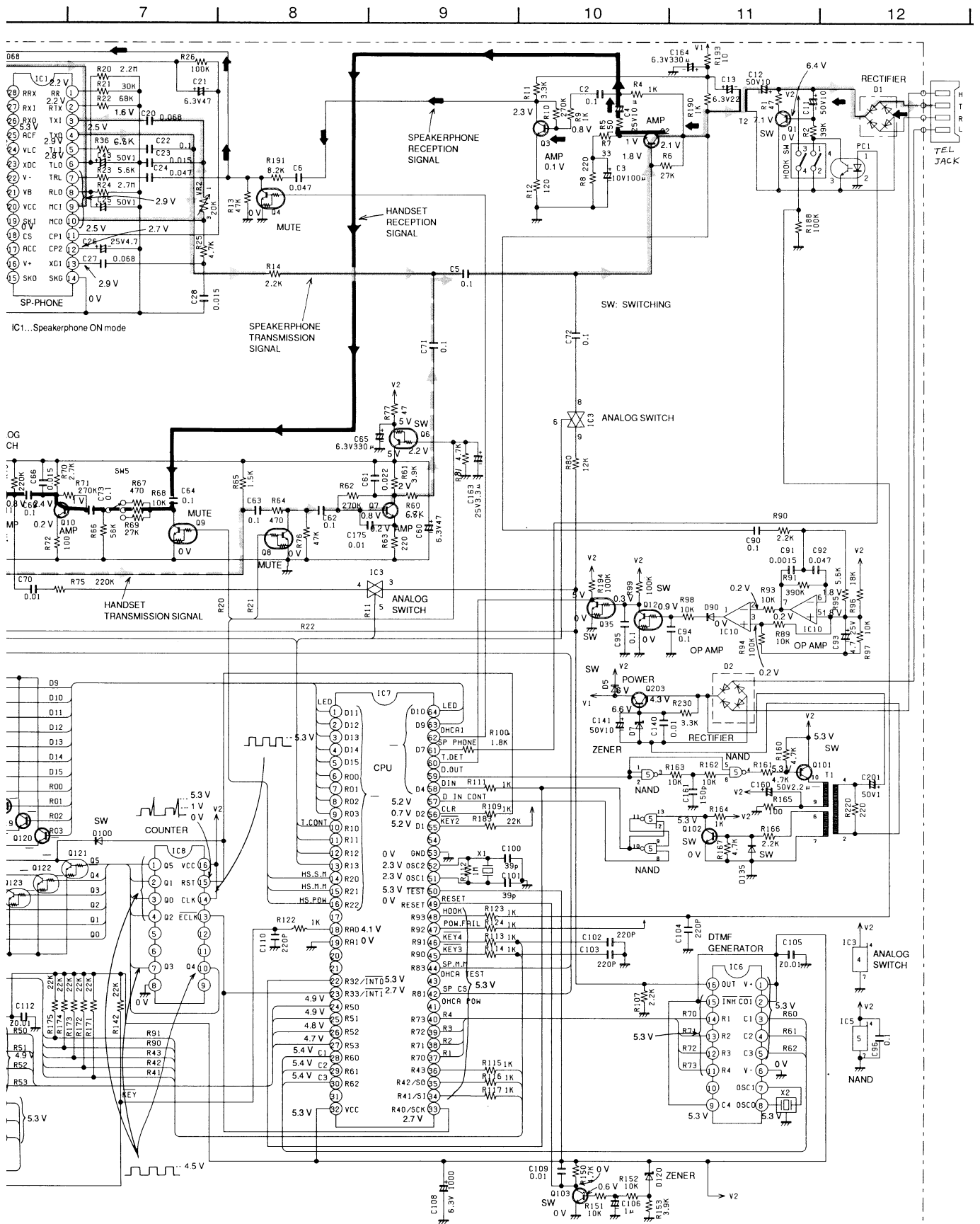
## BLOCK DIAGRAM



# SCHEMATIC DI



# ATIC DIAGRAM





## EXTENSION CORD CONNECTING METHOD

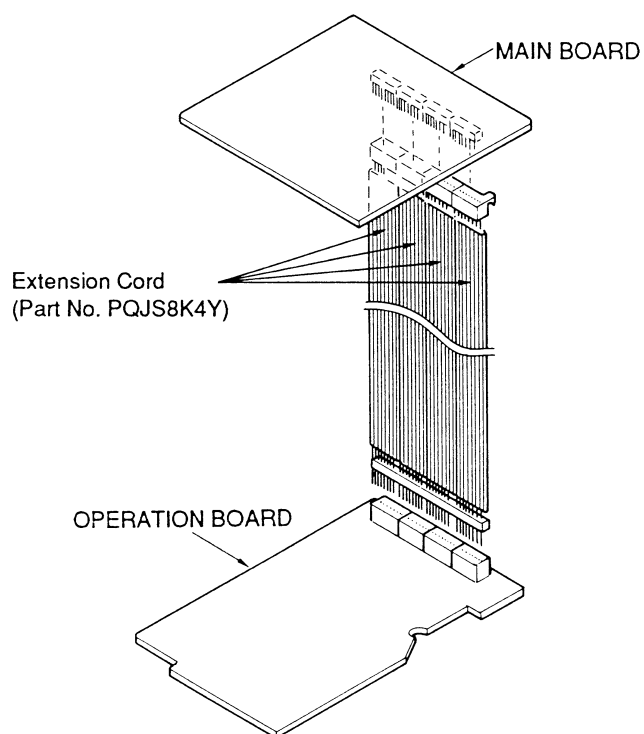
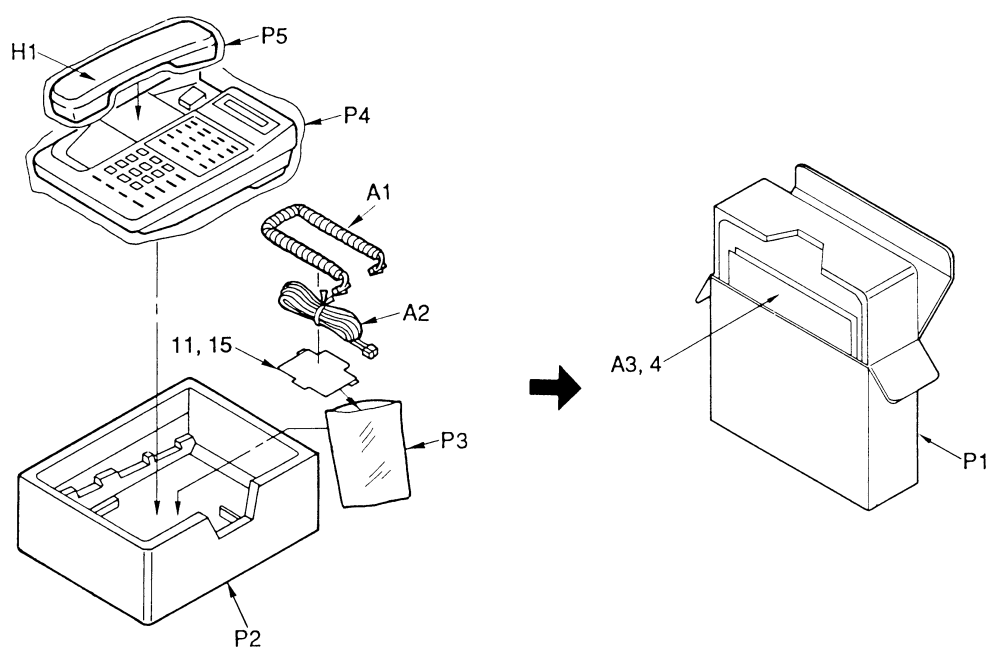
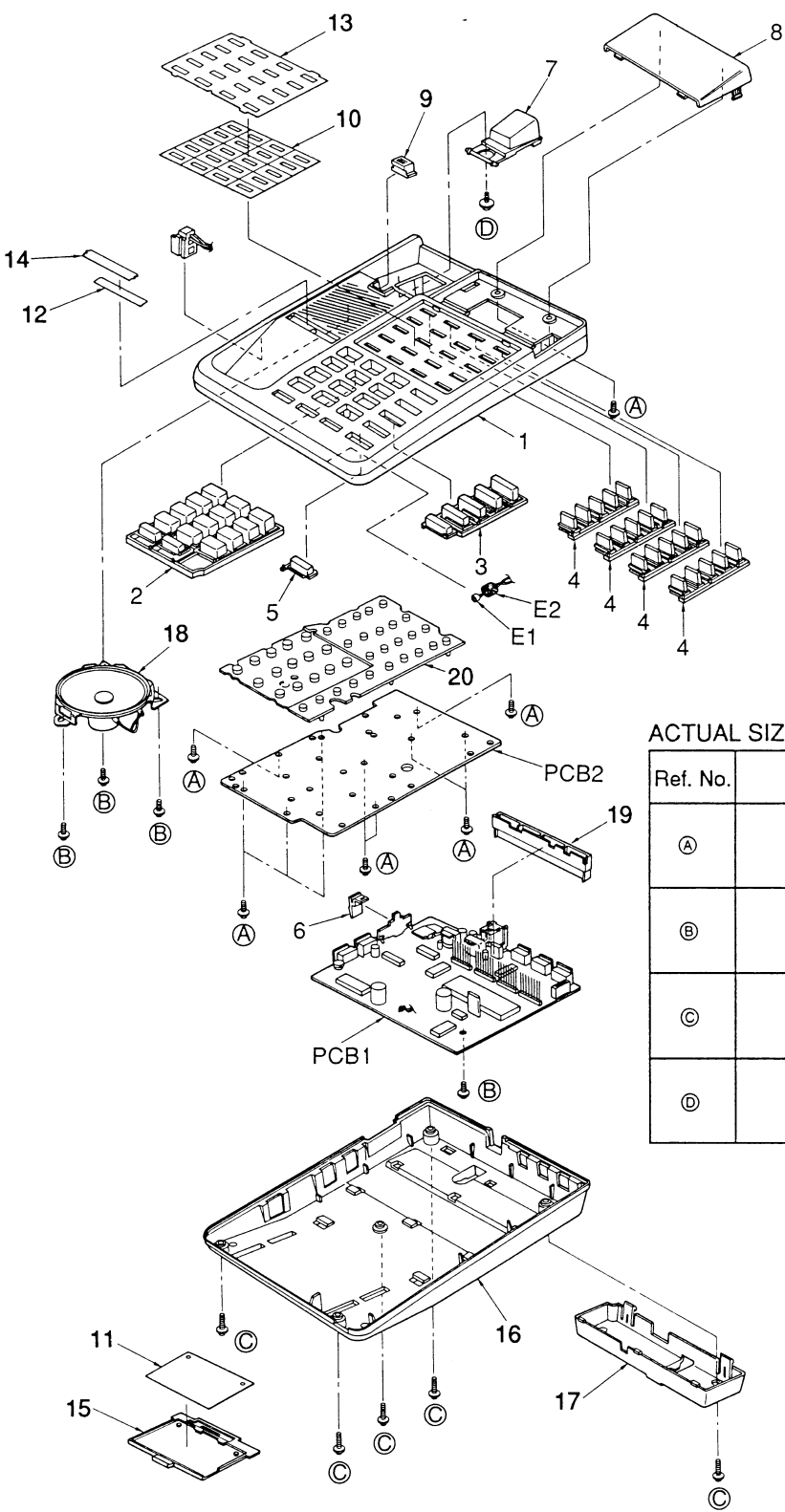


Fig. 11

## ACCESSORIES AND PACKING MATERIALS



CABINET AND ELECTRICAL PARTS LOCATION





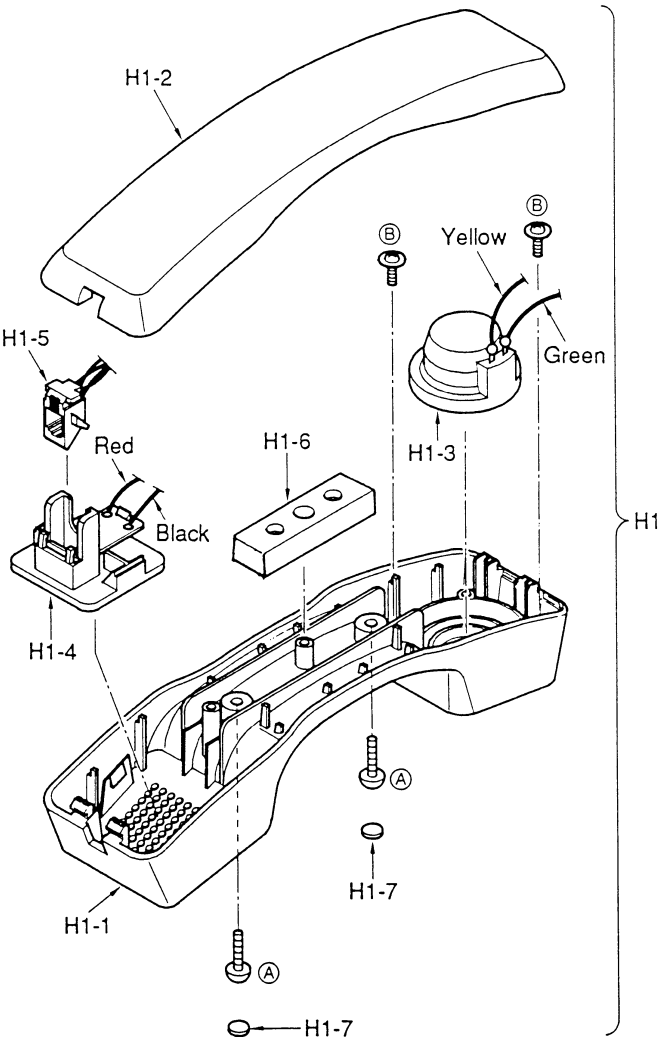
ACTUAL SIZE OF SCREWS

Ref. No.	Figure	Part No.
Ⓐ		XTW26+8F
Ⓑ		XTW3+S10M
Ⓒ		XTW3+S14P
Ⓓ		XTW3+W6F

HANDSET PARTS LOCATION

ACTUAL SIZE OF SCREWS

Ref. No.	Figure	Part No.
Ⓐ		XTN3+10G
Ⓑ		XTW3+W8P



# KX-T7020

## REPLACEMENT PARTS LIST

Model KX-T7020

### Notes:

- Printed circuit board assembly with mark (NLA) is no longer available after production discontinuation of the complete set.
- The S mark indicates service standard parts and may differ from production parts.
- RESISTORS & CAPACITORS  
Unless otherwise specified.  
All resistors are in ohms (  $\Omega$  ) k=1000 $\Omega$ , M=1000k $\Omega$   
All capacitors are in MICRO FARADS (  $\mu$ F ) P= $\mu$ F  
\*Type & Wattage of Resistor  
Type

ERC:Solid	ERX:Metal Film	PQ4R:Carbon
ERD:Carbon	ERG:Metal Oxide	ERS:Fusible Resistor
PQRD:Carbon	ERO:Metal Film	ERF:Cement Resistor

### Wattage

10,16:1/8W	14,25:1/4W	12:1/2W	1:1W	2:2W	3:3W
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### \*Type & Voltage of Capacitor

ECFD:Semi-Conductor	ECDD,ECKD,ECBT,PQCB: Ceramic
ECQS:Styrol	ECQE,ECQV,ECQG : Polyester
PQCUV:Chip	ECEA,ECSZ : Electrolytic
ECQMS:Mica	ECQP : Polypropylene

### Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H: 50V	05: 50V	0F:3.15V	0J :.63V	1V :.35V
2A:100V	1:100V	1A:10V	1A :.10V	50,1H:50V
2E:250V	2:200V	1V:35V	1C :.16V	1J :.63V
2H:500V		0J:6.3V	1E,25:25V	2A :100V

Ref. No.	Part No.	Part Name & Description	Pcs
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### CABINET AND ELECTRICAL PARTS

1	PQKM208X8	UPPER CABINET	1
2	PQBCX198Z	BUTTON, DIAL/REDIAL/FLASH	1
3	PQBCX199Z	BUTTON, TRANS/PAUSE/AUTO etc.	1
4	PQBCX200Z	BUTTON, INTERCOM/CONF etc.	4
5	PQBC282Z	BUTTON, HOLD	1
6	PQBD166Y	KNOB, VOLUME	1
7	PQBE37Z	BUTTON, HOOK	1
8	PQGG90Y	GRILLE	1
9	PQKE82Z	HANGER	1
10	PQHP5106Z	TEL. NO. CARD (LARGE)	1
11	PQHP5107Z	MEMORY CARD	1
12	PQHP532X	TEL. NO. CARD (SMALL)	1
13	PQHR5370Z	TRANSPARENT PLATE [TEL. NO. CARD (LARGE)]	1
14	PQHR576Z	TRANSPARENT PLATE [TEL. NO. CARD (SMALL)]	1
15	PQHR9565Z	COVER, MEMORY CARD	1
16	PQYFT7020X8	LOWER CABINET ASS'Y	1
17	PQYLT7030X8	STAND ASS'Y	1
18	PQAS65P06V	SPEAKER	1
19	PQHR9597Z	SPACER	1
20	PQSE118Z	KEY SWITCH	1

### HANDSET PARTS

H1	PQJX2PYL02Y	HANDSET ASSEMBLY	1
H1-1	PQKM211R87	LOWER CABINET	1
H1-2	PQKF192Y87	UPPER CABINET	1
H1-3	PQAX4P03Z	SPEAKER	1
H1-4	PQWMJ2PYL02Y	MICROPHONE ASS'Y	1
H1-5	PQJ1TB17X	JACK	1
H1-6	PQHIM32Y	WEIGHT	1
H1-7	PQHG695W	RUBBER PARTS, CAP	2

Ref. No.	Part No.	Part Name & Description	Pcs
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### ACCESSORIES AND PACKING MATERIALS

A1	PQJA214X	HANDSET CORD	1
A2	PQJA48W	TELEPHONE CORD	1
A3	PQOX6462Z	INSTRUCTION BOOK	1
A4	PQOX6463Z	INSTRUCTION BOOK (REFERENCE MANUAL)	1
P1	PQPK1451Z	GIFT BOX	1
P2	PQPN1197Z	CUSHION	1
P3	XZB15X25A01	PROTECTION COVER (FOR ACCESSORIES)	1
P4	XZB26X40A01	PROTECTION COVER (FOR UNIT)	1
P5	PQPH75Z	PROTECTION COVER (FOR HANDSET)	1

### MAIN BOARD PARTS

PCB1	PQWP1T7020X	MAIN BOARD ASS'Y (NLA)	1
IC1	PQVISC77655S	(ICs) IC	1
IC2	Not Used		
IC3	PQVITC4066BP	IC	S 1
IC4	Not Used		
IC5	PQVITC4011BP	IC	S 1
IC6	PQVIUM95089	IC	1
IC7	PQVI4046SA92	IC	1
IC8	PQVITC4017BP	IC	S 1
IC9	PQVITC7H42P	IC	S 1
IC10	PQVIUPC358C	IC	S 1

Q1	2SA1625	(TRANSISTORS) TRANSISTOR(SI)	S 1
Q2,3	2SD1819A	TRANSISTOR(SI)	S 2
Q4,5	PQVTFB1J3P	TRANSISTOR(SI)	2
Q6	PQVTDTA143XU	TRANSISTOR(SI)	1
Q7	2SD1819A	TRANSISTOR(SI)	S 1
Q8,9	PQVTBB1J3P	TRANSISTOR(SI)	2
Q10,11	2SD1819A	TRANSISTOR(SI)	S 2
Q12	PQVTDTC143E	TRANSISTOR(SI)	1
Q35	UN5213	TRANSISTOR(SI)	S 1
Q101	2SB1218A	TRANSISTOR(SI)	S 1
Q102,103	2SD1819A	TRANSISTOR(SI)	S 2
Q110-120	2SD1819A	TRANSISTOR(SI)	S 11
Q121	PQVTDTC123E	TRANSISTOR(SI)	1
Q122-126	PQVTDTC143E	TRANSISTOR(SI)	5
Q203	2SD2136	TRANSISTOR(SI)	1

D1,2	PQVDS1YB40F1	(DIODES) DIODE(SI)	2
D3	Not Used		
D4	Not Used		
D5	1SS131	DIODE(SI)	1
D6	Not Used		1
D7	MA4068	DIODE(SI)	1
D90	1SS131	DIODE(SI)	1
D100	1SS131	DIODE(SI)	1
D101,102	Not Used		
D103-118	1SS131	DIODE(SI)	16
D120	MA4039	DIODE(SI)	1
D135	1SS131	DIODE(SI)	1

PC1	PQVITL627	(PHOTO ELECTRIC TRANSDUCER) PHOTO COUPLER	S 1
SW1	PQSS2A27Y	(SWITCHES) SWITCH, MEMORY	1
SW2	Not Used		
SW3	Not Used		
SW4	PQSS3A17Y	SWITCH, RINGER	1
SW5	PQSS3A17Y	SWITCH, HANDSET VOLUME	1
HOOK SW	ESE14A211	SWITCH, HOOK	1

Ref. No.	Part No.	Part Name & Description	Pcs	Ref. No.	Part No.	Part Name & Description (Value)	Pcs
T1	ETE13K24AY	(TRANSFORMERS)	1	C94	PQCUV1E104MD	0.1	1
T2	PQLT8D2A	PULSE TRANSFORMER	1	C95	PQCUV1E104MD	0.1	1
		COMMUNICATION TRANSFORMER	1	C96	PQCUV1E104MD	0.1	1
				C97	Not Used		
				C98	Not Used		
				C99	Not Used		
VR1	PQVAL204B24A	(VARIABLE RESISTORS)	1	C100	PQCUV1H390JC	39P	1
VR2	PQNB3A00B24M	VOLUME CONTROL, 20kΩ (B)	1	C101	PQCUV1H390JC	39P	1
		SEMI-FIXED, 20kΩ (B)	1	C102	PQCUV1H221JC	220P	1
				C103	PQCUV1H221JC	220P	1
				C104	PQCUV1H221JC	220P	1
		(CRYSTAL OSCILLATOR & CERAMIC FILTER)		C105	PQCUV1H103KB	0.01	1
X1	PQVCX2500N9	CRYSTAL OSCILLATOR	1	C106	ECEA1HKS010	1	1
X2	PQVBT3.58G6	CERAMIC FILTER	1	C107	ECEA0JU102	1000	1
				C108	ECEA0JU102	1000	1
				C109	PQCUV1H103KB	0.01	1
		(CAPACITORS)		C110	PQCBC1H221KB	220P	1
C1	Not Used			C111	Not Used		
C2	PQCUV1E104MD	0.1	1	C112	PQCUV1H103KB	0.01	1
C3	ECEA1CK101	100	1				
C4	ECEA0JKS220	22	1				
C5	PQCUV1E104MD	0.1	1	C140	PQCUV1H103KB	0.01	1
C6	PQCUV1E473MD	0.047	1	C141	ECEA1HKS100	10	1
C7	Not Used						
C8	Not Used			C160	ECEA1HKS2R2	2.2	1
C9	Not Used			C161	PQCUV1H151JC	150P	1
C10	Not Used			C162	Not Used		
C11	ECEA1HKS100	10	1	C163	ECEA1HKS3R3	3.3	1
C12	ECEA2CU010	10	1	C164	ECEA0JU331	330	1
C13	ECEA0JKS220	22	1				
C14	Not Used			C175	PQCUV1H103KB	0.01	1
C15	Not Used						
C16	Not Used			C201	ECEA1HKS010	1	1
C17	Not Used						
C18	ECUV1H683MD	0.068	1			(RESISTORS)	
C19	Not Used			R1	PQ4R10XJ470	47	1
C20	PQCUV1C683MD	0.068	1	R2	PQ4R10XJ393	39K	1
C21	ECEA1CKS470	47	1	R3	Not Used		
C22	PQCUV1E104MD	0.1	1	R4	PQ4R10XJ122	1.2K	1
C23	PQCUV1H153KB	0.015	1	R5	PQ4R10XJ151	150	1
C24	PQCUV1E473MD	0.047	1	R6	PQ4R10XJ273	27K	1
C25	ECEA1HKS010	1	1	R7	PQ4R10XJ330	33	1
C26	ECEA1HKS4R7	4.7	1	R8	PQ4R10XJ221	220	1
C27	PQCUV1C683MD	0.068	1	R9	PQ4R10XJ102	1K	1
C28	PQCUV1H153KB	0.015	1	R10	PQ4R10XJ274	270K	1
C29	ECEA0JU102	1000	1	R11	PQ4R10XJ332	3.3K	1
C30	ECEA1CK101	100	1	R12	PQ4R10XJ121	120	1
C31	ECEA1CKS470	47	1	R13	PQ4R10XJ473	47K	1
C32	PQCUV1H333JC	0.033	1	R14	PQ4R10XJ222	2.2K	1
C33	ECEA1CKS470	47	1	R15	Not Used		
C34	PQCUV1C683MD	0.068	1	R16	Not Used		
C35	ECEA1HKS4R7	4.7	1	R17	Not Used		
C36	ECEA0JKS220	22	1	R18	Not Used		
C37	PQCUV1H103KB	0.01	1	R19	Not Used		
C39	PQCUV1E104MD	0.1	1	R20	PQ4R10XJ225	2.2M	1
C40	PQCUV1E473MD	0.047	1	R21	PQ4R10XJ303	30K	1
C41	ECUV1H104MD	0.1	1	R22	PQ4R10XJ683	68K	1
C42	ECEA1HKS4R7	0.47	1	R23	PQ4R10XJ562	5.6K	1
C43	ECEA1HKS010	1	1	R24	PQ4R10XJ275	2.7M	1
				R25	PQ4R10XJ472	4.7K	1
C60	ECEA1CKS470	47	1	R26	PQ4R18XJ104	100K	1
C61	PQCUV1H223KB	0.022	1	R27	PQ4R18XJ393	39K	1
C62	PQCUV1E104MD	0.1	1	R28	PQ4R10XJ152	1.5K	1
C63	PQCUV1E104MD	0.1	1	R29	PQ4R10XJ154	150K	1
C64	PQCUV1E104MD	0.1	1	R30	PQ4R10XJ222	2.2K	1
C65	ECEA0JU331	330	1	R31	PQ4R10XJ472	4.7K	1
C66	PQCUV1H153KB	0.015	1	R32	ERDS2TJ183	18K	1
C67	Not Used			R33	PQ4R10XJ103	10K	1
C68	ECEA1HKS100	10	1	R34	Not Used		
C69	PQCUV1E104MD	0.1	1	R35	PQ4R18XJ3R3	3.3	1
C70	PQCUV1H103KB	0.01	1	R36	PQ4R10XJ682	6.8K	1
C71	PQCUV1E104MD	0.1	1				
C72	PQCUV1E104MD	0.1	1	R60	PQ4R10XJ682	6.8K	1
C73	PQCUV1E104MD	0.1	1	R61	PQ4R10XJ392	3.9K	1
				R62	PQ4R10XJ274	270K	1
C90	PQCUV1E104MD	0.1	1	R63	PQ4R10XJ101	100	1
C91	PQCUV1H152KB	0.0015	1	R64	PQ4R10XJ471	470	1
C92	PQCUV1E473MD	0.047	1	R65	PQ4R10XJ222	2.2K	1
C93	ECEA1HKS4R7	4.7	1	R66	PQ4R10XJ563	56K	1

**KX-T7020**

Ref. No.	Part No.	Part Name & Description (Value)	Pcs	Ref. No.	Part No.	Part Name & Description	Pcs
R67	PQ4R10XJ471	470	1	R151	PQ4R10XJ103	10K	1
R68	PQ4R10XJ682	6.8K	1	R152	PQ4R10XJ103	10K	1
R69	PQ4R10XJ183	18K	1	R153	PQ4R10XJ392	3.9K	1
R70	PQ4R10XJ272	2.7k	1	R154	Not Used		
R71	PQ4R10XJ274	270K	1	R155	Not Used		
R72	PQ4R10XJ101	100	1	R156	Not Used		
R73	PQ4R10XJ224	220K	1	R157	Not Used		
R74	PQ4R10XJ102	1K	1	R158	Not Used		
R75	PQ4R10XJ224	220K	1	R159	Not Used		
R76	PQ4R10XJ473	47K	1	R160	PQ4R10XJ472	4.7K	1
R77	PQ4R10XJ470	47	1	R161	PQ4R10XJ472	4.7K	1
R78	PQ4R10XJ154	150K	1	R162	PQ4R10XJ103	10K	1
R79	PQ4R10XJ473	47K	1	R163	PQ4R10XJ103	10K	1
R80	PQ4R10XJ123	12K	1	R164	PQ4R10XJ102	1K	1
R81	PQ4R10XJ472	4.7K	1	R165	PQ4R10XJ101	100	1
				R166	PQ4R10XJ222	2.2K	1
R89	PQ4R10XJ103	10K	1	R167	PQ4R10XJ472	4.7K	1
R90	PQ4R10XJ222	2.2K	1	R168	Not Used		
R91	PQ4R10XJ394	390K	1	R169	Not Used		
R92	Not Used			R170	Not Used		
R93	PQ4R10XJ103	10K	1	R171	PQ4R10XJ223	22k	1
R94	PQ4R10XJ104	100K	1	R172	PQ4R10XJ223	22k	1
R95	PQ4R10XJ562	5.6K	1	R173	PQ4R10XJ223	22k	1
R96	PQ4R10XJ183	18K	1	R174	PQ4R10XJ223	22k	1
R97	PQ4R10XJ103	10K	1	R175	PQ4R10XJ223	22k	1
R98	PQ4R10XJ103	10K	1	R176	Not Used		
R99	PQ4R10XJ104	100K	1	R177	Not Used		
R100	PQ4R10XJ182	1.8K	1	R178	Not Used		
R101	Not Used			R179	Not Used		
R102	Not Used			R180	Not Used		
R103	Not Used			R181	Not Used		
R104	Not Used			R182	Not Used		
R105	Not Used			R183	PQ4R10XJ223	22K	1
R106	Not Used			R184	Not Used		
R107	PQ4R10XJ222	2.2K	1	R185	Not Used		
R108	Not Used			R186	Not Used		
R109	PQ4R18XJ102	1K	1	R187	Not Used		
R110	PQ4R10XJ564	560K	1	R188	PQ4R10XJ104	100K	1
R111	PQ4R18XJ102	1K	1	R189	Not Used		
R112	PQ4R10XJ105	1M	1	R190	PQ4R10XJ102	1K	1
R113	ERDS2TJ102	1K	1	R191	PQ4R10XJ822	8.2K	1
R114	ERDS2TJ102	1K	1	R192	Not Used		
R115	ERDS2TJ102	1K	1	R193	PQ4R10XJ100	10	1
R116	ERDS2TJ102	1K	1	R194	PQ4R10XJ104	100K	1
R117	ERDS2TJ102	1K	1				
R118	Not Used			R220	PQ4R10XJ221	220	1
R119	Not Used						
R120	Not Used			R230	PQ4R10XJ332	3.3K	1
R121	Not Used						
R122	ERDS2TJ102	1K	1			(CONNECTORS & JACKS)	
R123	PQ4R10XJ102	1K	1	CN6-9	PQJP8D113Z	CONNECTOR, 8P	4
R124	PQ4R10XJ102	1K	1	HS	PQJW1TB2T	JACK, HANDSET	1
R125	PQ4R10XJ181	180	1	JACK			
R126	PQ4R10XJ181	180	1	TEL	PQJW1TB26Z	JACK, EMSS	1
R127	PQ4R10XJ680	68	1	JACK			
R128	PQ4R10XJ330	33	1				
R129	PQ4R10XJ820	82	1			(OTHERS)	
R130	PQ4R10XJ330	33	1	E1	RJM142Z	MICROPHONE	1
R131	PQ4R10XJ820	82	1	E2	PQHGS03Z	RUBBER PARTS, MIC COVER	1
R132	PQ4R10XJ330	33	1				
R133	PQ4R10XJ820	82	1				
R134	PQ4R10XJ330	33	1				
R135	PQ4R10XJ820	82	1				
R136	Not Used					OPERATION BOARD PARTS	
R137	Not Used			PCB2	PQWP2T7020X	OPERATION BOARD ASS'Y (NLA)	1
R138	Not Used						
R139	Not Used					(DIODES)	
R140	Not Used					LED	
R141	Not Used			D617-621	LN1261C	LED	5
R142	PQ4R10XJ223	22K	1	D622	LN1361C	LED	1
R143	ERDS2TJ100	10	1	D623-634	LN2162C13TR	LED	12
R144	Not Used			D635	LN1261C	LED	1
R145	Not Used						
R146	Not Used					(CONNECTOR)	
R147	Not Used			CN1-4	PQJS8B30Z	CONNECTOR, 8P	4
R148	Not Used						
R149	Not Used						
R150	PQ4R10XJ472	4.7K	1				